

Abstract of the Invention

The present invention provides methods for

- (1) protecting cathodically critical areas of railway axles against corrosion by depositing selectively sacrificial metal films or mounting sacrificial metal components over those critical contact-free areas such as axle fillet, axle groove, bore surface of bearing backing ring and bore surface of bearing seal wear ring;
- (2) protecting cathodically internal surfaces of railway bearings against corrosion, by depositing selectively sacrificial metal films or mounting sacrificial metal components over those contact-free internal surfaces within the bearing assembly;
- (3) protecting critical areas of railway axles against corrosion and impact damages by providing a protective seal made of resilient material to the axle fillet, axle dust guard area, sealing the joint between bearing components and the axle, and adding a resilient protection barrier over those critical areas of the axle.